IMP-I

DETAIL DATA (80 MS) 1.28 AVERAGE VECTOR

71-019A-01D

THIS DATA SET HAS BEEN RESTORED. ORIGINALLY THERE WERE 57 9-TRACK, 6250 BPI TAPES WRITTEN IN BINARY. THERE ARE 56 RESTORED TAPES. D63853 WAS NOT RESTORED, IT WAS A BAD TAPE. THE TAPES WERE CREATED ON AN IBM 360 COMPUTER. THE DR TAPES ARE 3480 CARTRIDGES AND THE DS TAPES ARE 9-TRACK, 6250 BPI. THE DR AND DS NUMBERS ALONG WITH THE CORRESPONDING D NUMBERS ARE AS FOLLOWS:

DR#	DS#	D#	FILES	TIME SPAN
DR02212	DS02212	D63864	1-3	01/13/74 - 01/23/74
DR02183	DS02183	D60463	1-5	02/08/73 - 02/19/73
DR02184	DS02184	D60464	1-5	02/19/73 - 03/01/73
DR02185	DS02185	D60465	1-5	03/01/73 - 03/11/73
DR02186	DS02186	D60466	1-5	03/11/73 - 03/22/73
DR02187	DS02187	D60467	1-5	03/22/73 - 04/01/73
DR02188	DS02188	D60468	1-5	04/01/73 - 04/11/73
DR02189	DS02189	D60469	1-5	04/11/73 - 04/24/73
DR02190	DS02190	D60470	1-5	04/24/73 - 05/05/73
DR02191	DS02191	D60471	1-4	05/05/73 - 05/15/73
DR02192	DS02192	D60472	1-3	05/15/73 - 05/23/73
DR02193	DS02193	D60618	1-5	05/25/73 - 06/04/73
DR02194	DS02194	D60619	1-5	06/04/73 - 06/15/73
DR02195	DS02195	D60620	1-5	06/15/73 - 06/25/73
DR02196	DS02196	D60621	1-4	06/25/73 - 07/06/73
DR02197	DS02197	D60622	1-5	07/06/73 - 07/16/73

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DR#	DS#	D#	FILES	TIME SPAN
DR02198	DS02198	D60623	1-5	07/16/73 - 07/26/73
DR02199	DS02199	D60624	1-5	07/26/73 - 08/06/73
DR02200	DS02200	D60625	1-5	08/06/73 - 08/16/73
DR02201	DS02201	D60626	1-5	08/16/73 - 08/26/73
DR02261	DS02261	D63847	1-5	08/19/73 - 09/16/73
DR02202	DS02202	D60627	1-5	08/26/73 - 09/06/73
DR02262	DS02262	D63848	1-5	09/16/73 - 09/27/73
DR02263	DS02263	D63849	1-4	09/27/73 - 10/07/73
DR02264	DS02264	D63850	1-5	10/07/73 - 10/17/73
DR02265	DS02265	D63851	1-5	10/17/73 - 10/28/73
DR02266	DS02266	D63852	1-4	11/07/73 - 11/11/73
DR02267	DS02267	D63854	1-3	11/26/73 - 12/02/73
DR02268	DS02268	D63855	1-3	12/05/73 - 12/15/73
DR02269	DS02269	D63856	1-5	12/15/73 - 12/25/73
DR02210	DS02210	D63862	1-4	12/25/73 - 01/02/74
DR02211	DS02211	D63863	1-4	01/02/74 - 01/13/74
DR02203	DS02203	D63847	1-5	01/23/74 - 01/31/74
DR02204	DS02204	D63848	1-5	01/31/74 - 02/11/74
DR02205	DS02205	D63849	1-5	02/11/74 - 02/21/74
DR02206	DS02206	D63853	1-5	02/21/74 - 03/03/74
DR02207	DS02207	D63854	1-3	03/03/74 - 03/14/74
DR02208	DS02208	D63855	1-5	03/14/74 - 03/24/74
DR02209	DS02209	D63856	1-4	03/24/74 - 04/04/74
DR02244	DS02244	D63992	1-5	04/04/74 - 04/14/74
DR02245	DS02245	D63993	1-5	04/14/74 - 04/24/74
DR02246	DS02246	D63994	1-5	04/24/74 - 05/04/74

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DR#	DS#	D#	FILES	TIME SPAN
DR02247	DS02247	D63995	1-5	05/05/74 - 05/15/74
DR02248	DS02248	D63996	1-5	05/15/74 - 05/25/74
DR02249	DS02249	D63997	1-5	05/25/74 - 06/25/74
DR02250	DS02250	D63998	1-5	06/05/74 - 06/15/74
DR02251	DS02251	D63999	1-5	06/15/74 - 06/26/74
DR02252	DS02252	D64000	1-5	06/26/74 - 07/06/74
DR02253	DS02253	D64001	1-5	07/06/74 - 07/17/74 (a)
DR02254	DS02254	D64042	1-5	07/17/74 - 07/26/74
DR02255	DS02255	D64043	1-5	07/27/74 - 08/06/74
DR02256	DS02256	D64044	1-5	08/06/74 - 08/16/74
DR02257	DS02257	D64045	1-4	08/16/74 - 08/27/74
DR02258	DS02258	D64046	1-5	08/27/74 - 09/06/74
DR02259	DS02259	D64047	1-5	09/06/74 - 09/15/74
DR02260	DS02260	D64048	1-5	09/16/74 - 10/01/74

(a) D064001 - one read error, record 40, File 1

IMP EYE DETAIL DATA AND 1.28 SEC STATISTICS TAPE
PRODUCED BY PHASE I PROGRAM

This tape is written by the PAYAVG subroutine by a call to FWRITE which is a subroutine contained in the FTIO package. The following DD card is used to produce the tape:

```
//GO.FT11F001 DD UNIT=2400-9,LABEL=(,BLP,,OUT),DISP=(NEW,PASS),
// DCB=(RECFM=U,BLKSIZE=11068,DEN=3),VOLUME=SER=Z560
```

The format of the tape is as follows

ITEM	DESCRIPTION	(DIMEN) (TYPE)(SIZE)	UNITS	NOTES
1	Year	60(I*2)		Last two digits only
2	Day	60(I*2)	Days	Jan 1 = 0
3	Millisecond of Day	60(I*4)	Millisec	Elasped Milliseconds in day
4	Data Quality Flag	60(I*2)		See definitions Ref 1
5	Bit Rate Flag	60(I*2)		0≡High; 1≡Low
6	Pseudo Sequence Count	60(I*4)		
7	Housekeeping	60(I*4)		(1)*
8	F (Average over 1.28 sec)	240(R*4)	γ	$F=SQRT((\frac{1}{16}\Sigma X_i)^2+(\frac{1}{16}\Sigma Y_i)^2+(\frac{1}{16}\Sigma Z_i)^2)$
9	θ (Average over 1.28 sec)	240(R*4)	Degrees	$-90^\circ \leq \theta \leq +90^\circ$
10	ϕ (Average over 1.28 sec)	240(R*4)	Degrees	$0^\circ \leq \phi < 360^\circ$
11	σF (Standard Deviation)	240(R*4)	γ	$\sigma F=SQRT(\sigma_X^2+\sigma_Y^2+\sigma_Z^2)$
12	TRAJECTORY Day	I*4	Days	Jan 1 = 0
13	TRAJECTORY Millisec of day	I*4	Millisec	Elasped Millisec in day
14	Geomagnetic latitude satellite position	R*4	deg	
15	Geomagnetic longitude satellite position	R*4	deg	
16	X Geocentric solar ecliptic satellite position	-R*4	km	

56
92
28
12
188

ITEM	DESCRIPTION	(SIZE) (TYPE	UNITS	NOTES
17	Y Geocentric solar ecliptic satellite position	R*4	km	
18	Z Geocentric solar ecliptic satellite position		km	
19	Radial distance to satellite from earth center		km	
20	Y Geocentric solar magnetospheric satellite position		km	
21	Z Geocentric solar magnetospheric satellite position		km	
22	Geomagnetic latitude sun position		deg	
23	Geomagnetic longitude sun position		deg	
24	X theoretical geomagnetic field in geocentric solar ecl.		gamma	
25	Y theoretical geomagnetic field in geocentric solar ecl.		gamma	
26	Z theoretical geomagnetic field in geocentric solar ecl.		gamma	
27	Rotation matrix from geocentric solar ecliptic to geocentric solar magnetospheric. (items 27 thru 35).	R*4		Elements given in the following order:
28				1st row, 1st col.
29				1st row, 2nd col.
30				1st row, 3rd col.
31				2nd row, 1st col.
32				2nd row, 2nd col.
33				2nd row, 3rd col.
34				3rd row, 1st col.
35				3rd row, 2nd col.
36	Rotation matrix from celestial inertial to geocentric solar ecliptic. (Items 36 thru 44).			3rd row, 3rd col.
37				
38				
39		R*4		

ITEM	DESCRIPTION	(SIZE) (TYPE	UNITS	NOTES
40		R*4		
41		R*4		
42		R*4		
43		R*4		
44		R*4		
45	Geocentric latitude satellite position	R*4	deg	
46	Geocentric longitude satellite positon	R*4	deg	
47	Detail X	960(I*2)	(γ/K) (2)	Multi by K to convert to γ
48	Detail Y	960(I*2)	(γ/K)	Multi by K to convert to γ
49	Detail Z	960(I*2)	(γ/K)	Multi by K to convert to γ
50	L(3)	(I*4)		See explanation below
51	CHSUM	60(I*2)		The sum of the X,Y and Z check sums for the sequence

43 8

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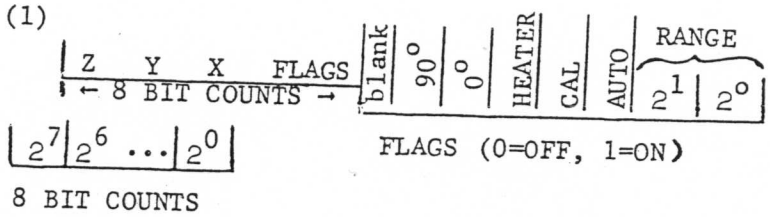
(1)



(2) $K = 0.02283535 = \frac{\sqrt{3}(432)}{32767}$

(3) L is used in conjunction with the Bit Rate Flag for the sequence, i.e., Item #5 to determine how much valid data has been stored in the physical record.

The number sequences present in the physical record will be $\frac{L-1}{4} + 1$.

ITEMS (ARRAYS)	RANGE OF INDEX ON THIS ARRAY	INCREMENT INDEX BY
1-7	$1 \le I \le \frac{L-1}{4} + 1$	1 (one entry/sequence)
8-11	$1 \le J \le L + 3$	1 - if low bit rate 4 - if high bit rate
47-49	$1 \le K \le 4(L-1) + 16$	16 (16 entries/sequence)

For Example:

1). To obtain the Bit Rate Flag for the third sequence from the Bit Rate Flag Array (Item #5) we would let I = 3.

2). To obtain the Bit Rate Flag for the last sequence from the Bit Rate Flag Array we would let $I = \frac{L-1}{4} + 1$.

3). To obtain the 1.28 second Average F for the third sequence from the F Array (Item #8) we would let J = 9. If in the high bit rate this is the only F that has been computed for this sequence. If in the low bit rate fo (4) F's have been computed for this sequence and J = 9,10,11,12 is appropriate. This is because in the high bit rate the sequence is 1.28 sec in length but in the low bit rate it is 4*(1.28)=5.12 sec in length.

4). To obtain detail X for the third sequence from the Detail X Array (Item #47) we let K = 32,33,. . . . . 48. There are 16 individual X measurements in a sequence regardless of the bit rate.